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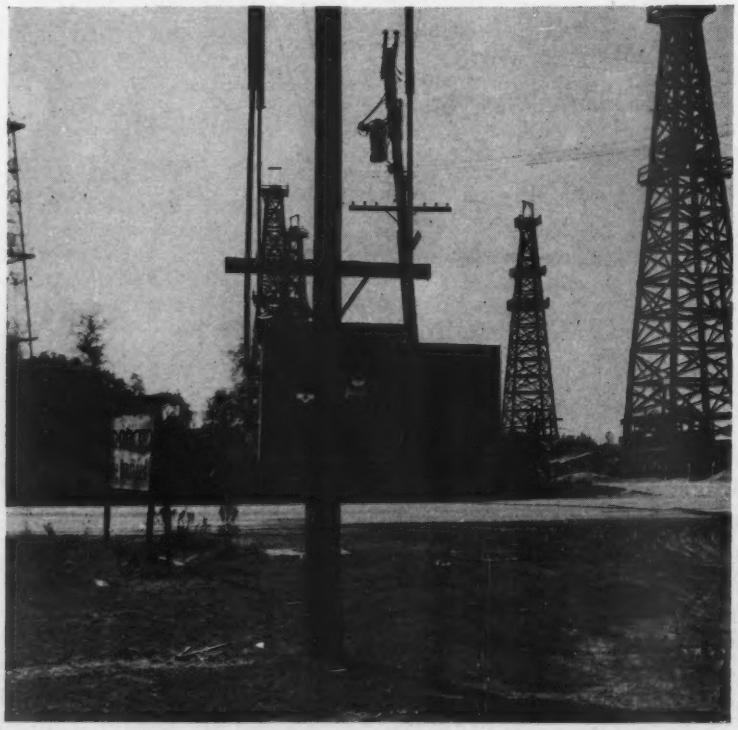

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Petroleum Industry Farthest Ahead in Race

To Bolster National Defense

No reader of the California Oil World lacks the feeling of pride which comes with recalling the internationally voiced expression that "the Allies floated to victory on a sea of American petroleum" in the first World War. In the present world crisis, however, the conduct of modern warfare places petroleum in a position of importance not even approached during 1914-1919. Then the industry contributed fuel oil for ships, lubricants, relatively high end-point gasolines for motor vehicles, tanks and cumbersome airplanes, and solvents. Today, the petroleum industry is geared up to large scale production not only of highly specialized fuels and lubricants for every type of transportation, but also many of the raw materials for the manufacture of explosives, plastics, synthetic rubbers, antiseptics, medicinals, lethal or obstructive gases, not to mention hundreds of specialties required by other industries.

Today, in the interest of national defense, the petroleum industry's activities have been placed under an emergency system of supervision headed by a Petroleum Coordinator appointed by the President. The rapid expansion the petroleum industry has made in its facilities to produce larger volumes of high octane gasolines and other fuels, and the promptness with which it has responded to requests of federal agencies, leaves no doubt of the industry's eagerness to contribute wholeheartedly to national defense. The difficulties which the industry faces are not from within. One has but to consider the situation which has arisen from the transfer of tankers to England, and the hardships which may come in connection with the problem of priorities in obtaining needed equipment and materials, to see how much study, hard work and sacrifice lies ahead.

Of timely interest is the publication by the Bureau of Mines of "Developments In The American Petroleum Industry, 1914-1919," a review of the industry's trials and triumphs during those war torn years. The following is quoted from that publication*, written by H. C. Fowler.

There is difficulty in drawing a sharply defining line at or about April 17, 1917, (the date of our official declaration of war) that will segregate in two categories the kaleidoscopic events of that war-torn period as they affect or are reflected by technical developments of the American petroleum industry. It is true that with the formal declaration of war human energies were strained even more than before to produce additional oil and convert it into essential products for the fleet, the American Expeditionary Force, the domestic war-time activities, and the Allies. More wells were drilled on "wildcat" locations, and more costly innovations were tried because the price of oil warranted such expenditures. Many persons will recall the gasolineless Sundays curtailed, if not almost stopped, pleasure driving in some areas on that customary recreational day of the week. Plans and schemes (some good, some indifferent, and others actually bad) were proposed in great number—many unsolicited—to boost production. Many more refining plants were built to meet the growing demand for gasoline and fuel oil. Wells, tank farms, pipe lines, and refineries were guarded against possible sabotage. On the whole, however, the petroleum industry went about its business with no ruffle of drums or waving banners. When voluntary enlistment or the draft took key men from a company organization the ranks closed in, and often one man did the former work of two without complaint. It was the spirit of the period, and necessary and expected

Efforts are being made to de-water old fields thus adding to California oil reserves. Kern River oil field, shown above, was discovered in 1899, before water shutoff methods had been perfected.

readjustments were made without fanfare.

As nearly as can be determined, in the technical fields of exploration, extraction, and transportation, the actual entrance of this country into the World War forced early introduction of relatively few innovations that affected the upward trend, already begun, of an increasing scientific knowledge and its practical applications. It is believed that most of the new techniques of the period would have evolved at about their natural rate of growth and development whether or not this country had joined the Allies.

There is probably a definite reason for this difference between the psychogenesis of human mass reactions and the evolution of scientific physical expressions in the form of industrial methods, devices, or processes. This thought pertinent to bounding time limits has been expressed in reviews of technical development during the designated periods. For example, the writer stated:

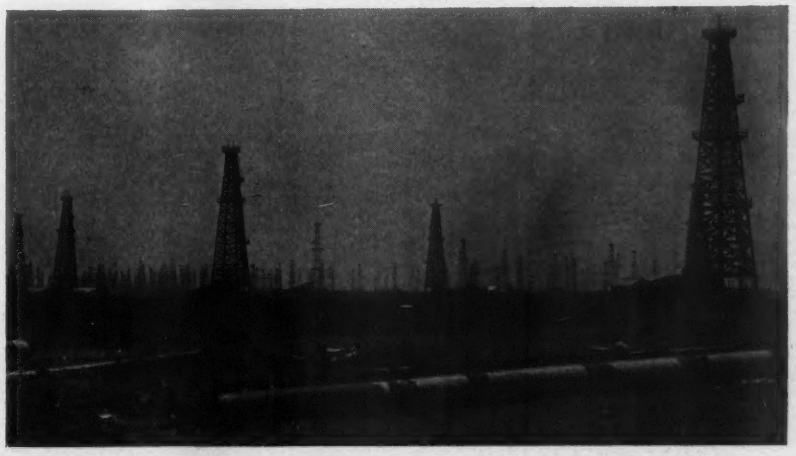
"The significance of newly found engineering facts and resulting new departures in economic arrangements cannot be bounded by definite calendar limits. Several years of experiment may be required to bring a newly conceived idea to satisfactory practical application, although during the development stage it may exert an influence on the industry. Even after a new idea, resulting in a method of operation, device, or tool, is proved its ultimate effect is not easy to determine because of the appreciable 'time-lag' required to evaluate cause and effect properly."

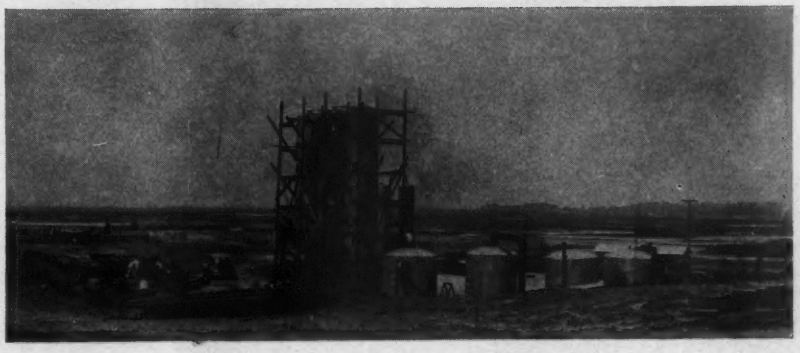
Statistical Position of the Industry

To maintain a suitable outlook throughout this digest, it will be helpful to remember that the capital investment of the petroleum industry in 1914 was said to have been about one-half billion dollars, compared to what now is termed a 14½ billion dollar industry, and some are inclined to place the present valuation even higher. The total crude oil production in the United States in 1914 was only 265,764,000 barrels, compared with more than one billion barrels for recent annual production. California led all other States, with almost 100 million barrels; Oklahoma was second, with approximately 73.5 million barrels; and Illinois, with almost 22 million barrels, outranked Texas for third place by nearly 2,000,000 barrels. At the end of the war the statistical positions of the leading states had changed. The United States produced 355,928,000 barrels in 1918. Of this quantity, Oklahoma produced 103.3 million, California 97.5 million, Kansas 45.4 million, Texas, 38.8 million, and Illinois had dropped to 13.4 million barrels.

At the end of 1919 the total domestic crude oil production was 378,367,000 barrels, California again leading with 101.2 million, while Oklahoma dropped to second place with 86.9 million barrels (but again took first place in 1920). Texas advanced to 79.4 million in 1919. Kansas dropped to 33 million, and Illinois went into a further decline with slightly less than 12 million barrels.

Hager implied a view, probably held by many, that the peak of oil production had been reached in 1915, 1916, and 1917 in Oklahoma and Kansas. Others publicly stated concern over the diminishing reserves in the Gulf Coast and other areas. In a later section it is shown (Bureau of Mines Information Circular 7171) that geologists in the Mid-Continent were working largely on the basis of surface geology and other surface indications, and many of the easily recognized structures had been prospected with the drill. Hager believed that deeper pay horizons would be found in many areas and that some fields would be extended, but a significant part of his paper is the statement: " . . . the period of intensive development has now arrived." He urged that the techniques of petroleum engineering be utilized fully and that every engineer try to convince oil operators that combined engineering and geo-





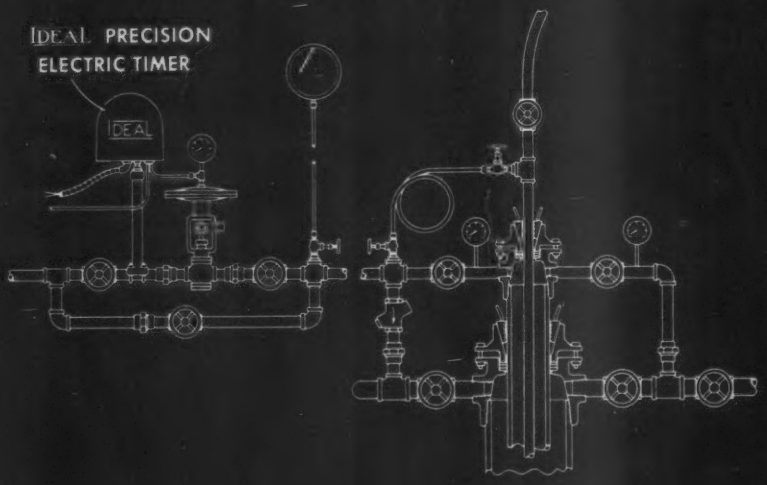
Oil companies are moving ahead rapidly with additional pipelines and processing plants. Above shots were taken recently in the Bolsa Chica oil field.

National

ECONOMICAL PRODUCTION TO DEPLETION BY PROGRESSIVE STAGES OF

Surface Controlled Gas Lift

FOR BEST POSSIBLE GAS-OIL RATIOS



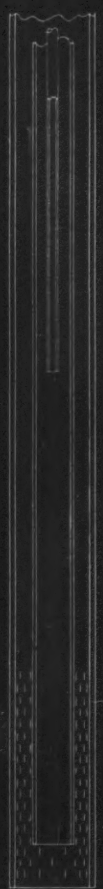
At Any Fluid Level

HIGH FLUID LEVEL STAGE

No Valves In Hole

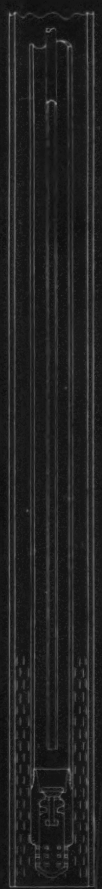
Flexible Control

Easy Starting



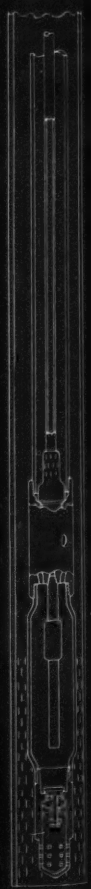
INTERMEDIATE STAGE

Standing Valve For Reduced Back Pressure Against Formation



FINAL STAGE

Improved IDEAL-JAT Gas Displacement Pump For Minimum Back Pressure Against Formation



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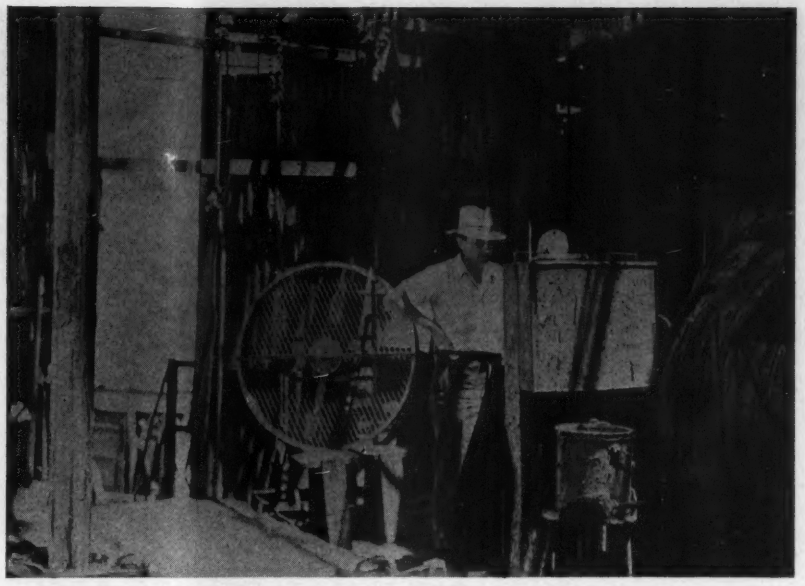
logical methods were requisite to the intensive development of oil properties then in prospect. His use of the word "intensive" suggests the need for "more oil" later in 1917 . . .

During the late part of 1917 and throughout 1918 the activities of the Bureau of Mines on petroleum and natural gas were devoted largely to problems of the war. The personnel of the Petroleum Division, because of their training and knowledge of oil and gas matters, were in a position to give immediate service to the newly created United States Fuel Administration and to the armed forces of the country. Throughout the war period, in addition to the performance of a variety of confidential technical work, a determined effort was made to emphasize the prevention of waste of oil and gas, and their more efficient utilization.

At the end of the war "the Bureau was confronted with the need of enabling the mineral industries of the country to meet most effectively the inevitable difficulties that would confront them during the transition from the strain of war to the resumption of the normal activities of peace. Investigations in progress were stopped or given a new direction; plans for the future were changed; new investigations were proposed; work was concentrated on those investigations that promised to be most beneficial to the mineral industries during the period of transition and readjustment."

The second annual report of the State oil and gas supervisor of California for the fiscal year 1916-1917 was submitted to Gov. William D. Stephens on February 18, 1918. (In it) McLaughlin specifically recognized the extreme importance of saving oil because of the entrance of the United States into the war. He felt that public welfare would be served "for the utmost economy of labor and materials, together with the maximum production" by showing the extent to which latest and most approved methods were being used by the operators. Accordingly,



The search for new oil fields moves apace. Here George Wimer, tool pusher, is shown at Shell's recent discovery near Raisin City.

he reported publicly the status of companies in the State with regard to their use of "thoroughly organized and competent technical departments for the purpose of studying underground conditions and directing development work." With one important exception, nine companies listed as producing more than 1 million barrels of oil annually had well organized technical departments or had indicated their assent to suggestions from the Department of Petroleum and Gas that henceforth they would utilize technical and scientific methods. Eleven companies each with less than 1 million barrels of oil production annually, are listed in the group where some scientific direction was given to the work . . .

In transmitting the Third Annual Report of the State Oil and Gas Supervisor (California), the State mineralogist was able to advise Governor Stephens on December 1, 1918, that "very gratifying results have followed 3 years of educational work, during which time both the department and the oil operators have advanced in knowledge of natural laws governing underground conditions." Because a few operators failed to "realize their responsibility in protecting the oil fields, in which the public is vitally interested" (as shown by the printed record of formal complaints), the need for certain changes in the law to make it more effective had become apparent; but in general the operators seemed willing to follow the engineering advice of the department.

The State oil and gas supervisor again referred to the conditions caused by the war that had made it clearly evident that the "national existence demands economy in almost all forms of material and energy." This objective, he remarked, depended on orderly and logical utilization of facts under scientific management and engineering methods. The number of companies conducting their operations on the basis of scientific method has doubled since the issuance of the second annual report. Athough encouraging, there was much yet to be done because:

"The present shortage of oil as well as casing gives cause for serious reflection before the issuance of an order which either postpones the production of oil or requires an increase in the amount of casing to be used. On the other hand, the protection of the oil-bearing deposits is prime necessity, particularly in

"ALL OIL WELL CHAINS ARE ALIKE," HE SAID

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...AND LEFT HIMSELF "WIDE OPEN" FOR THIS...

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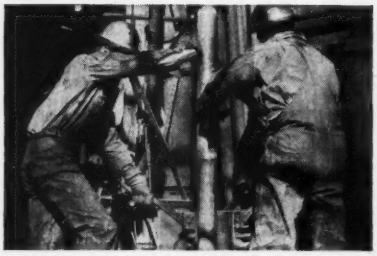

③ **"HERE'S WHERE THE VALUE** of the Rex Unit Link and Rex *all alloy steel construction* shows up! Rex chains are heat treated, precision finished. They flex easily from the start! Naturally, they wear more evenly and last longer.

④ **"AND REMEMBER THIS,** Rex provides better-than-ordinary lubrication. There are two sets of oil holes in the bushing that are always ready to receive oil and send it to the pin. And with the chain running in *either* direction!

⑤ **"GET THE WHOLE STORY** about the Rex riveted pin joint that has *all* the advantages of a cottered chain and *none* of its disadvantages! Also, check Catalog 444—see why Rex Champion is the best chain for your toughest work!"

⑥ **"SOUNDS INTERESTING,"** he said. "And when I told him how easy it was to get Rex oil well chains at his nearest supply store, he 'got on the phone,' made arrangements for delivery before I left. He'll be another satisfied Rex user, soon!"

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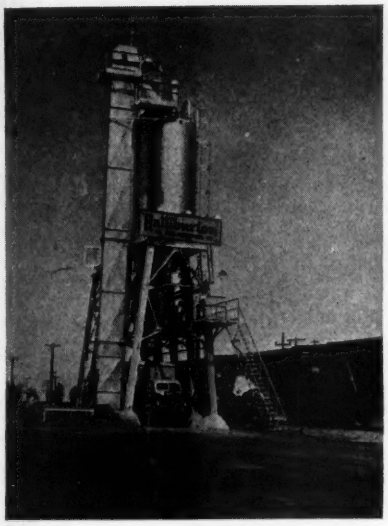


What would the 1914-1919 operators have thought of these "bulk cementing" jobs and equipment?

the present stage of national necessity."

. . . The American Petroleum Institute did not come into being officially until March 14, 1919, when A. C. Bedford, Chairman of the National Petroleum War Service Committee, received the decoration of the Chevalier of the Legion of Honor from the French Government. Petroleum Facts and Figures (first edition, 1928), states that the institute was formed as "an outgrowth of the activities of the National Petroleum War Service Committee, which service revealed the advisability and necessity of a permanent organization of such character," reference was given to the four objects of the Institute as expressed in its charter, namely:

(a) To afford a means of cooperation with the Government in all matters of national concern; and

(b) To foster foreign and domestic trade in American petroleum; and

(c) to promote in general the interests of the petroleum industry in all its branches; and

(d) To promote the mutual improvements of its members and the study of the arts and sciences connected with the petroleum industry.

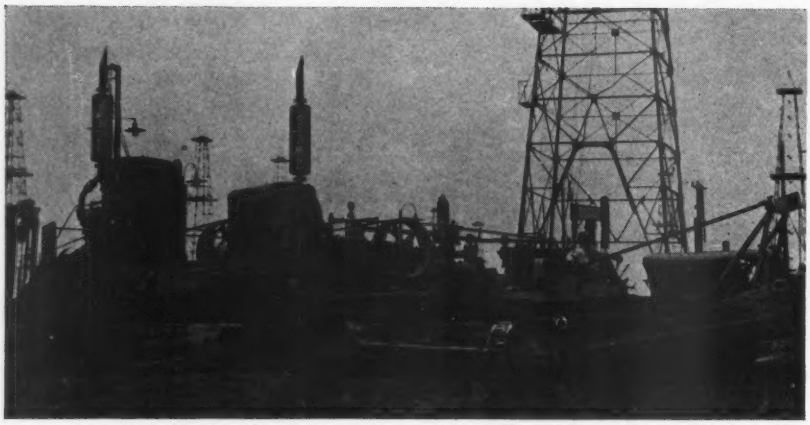
Drilling in California

Guiberson presented a clear, concise description of methods of drilling wells in California in 1915. Evidently, many who were accustomed to drilling wells in Eastern fields were critical of California methods. For example, in one of the early technical discussions, A. F. L. Bell, answering the direct question of a Louisiana operator regarding the use of large casing in California wells, said that his inquirer was "not the first and only Eastern man who has thought we were extravagant in our work." Bell then pointed out that many wells east of the Rocky Mountains were drilled and placed on the pump for a sum needed in California only to build and "rig up" the derrick preparatory to drilling a deep well—about $4,000.

The California operators experienced great difficulty with collapsed casing; Guiberson, answering other Eastern operators who questioned why under those conditions the derrick was not skidded to a new location and a new hole begun, pointed out that the cost of drilling a hole to 2,000 feet (where a collapsed joint could be expected) might easily be $20,000. Therefore, every effort to salvage such a costly hole had to be made before it was abandoned. The Eastern operators were not familiar with formations that dipped at angles of 40° to 60°, causing crooked holes. Flintlike boulders embedded in formations of soft sand were another obstacle in these steeply dipping strata. To prevent a crooked or "out-of-round" hole, cobblestones often were dropped in the well bore. It is recalled that the cobblestones were about the size of a driller's fist; some were larger. Even when cobblestones were used the driller had to watch each turn of the temper screw very carefully.

An extra string of tools ordinarily stood ready for use in well-equipped cable-tool rigs in California; this was known as the underreamer string, and in place of the customary chisel-nosed percussion bit the bottom of this string was equipped with an underreamer for enlarging the size of the hole and making it circular in cross section. Guiberson states that by underreaming and continually moving the casing during drilling a string of 15½-inch casing could be carried to 1,500 feet and a 12½-inch string to 2,300 or 2,400 feet; strings even longer than those mentioned had been landed successfully. However, spears and other fishing tools, and jacks to loosen "frozen" casing were used frequently.

According to Guiberson, cementing had become fairly well recognized as a necessary adjunct to the successful drilling of wells in California despite some opposition experienced by the California State Mining Bureau after the Act of 1915 became effective. The more progressive operators cemented their wells with at least 5 tons of cement and allowed them to stand full of water for 15 days before they were drilled into the oil formations—a procedure in contrast with formation shutoffs, practiced in many fields in Eastern States. If a well could not be bailed dry it was necessary to find the leak and repair the damage by the most feasible means at hand. Sometimes a packer was run into



Now-a-days it's no job at all to move the drilling rig and the unitized mud pump system to a new location without dismantling.

the hole, making possible sealing of the leak with cement. Again the defective pipe had to be removed, if possible, and a new string of casing placed and cemented in the hole.

Information on costs of drilling in California is given in Guiberson's report as follows: An operator expected his well to cost at least $10 a foot, it might cost $20 a foot, and $30 a foot was not uncommon. The drilling of a well to the producing horizon required 12 to 15 months; one well in Kern County required over 2 years to drill and cost more than $165,000. Guiberson concluded that old-style methods would not be applicable to drilling of wells in California, and that new tools, heavier rig irons, and stronger derricks were needed.

Antedating Guiberson's article by several months, Lombardi, then in charge of development work for the Kern Trading & Oil Co. (later called the Pacific Oil Co., and finally consolidated with the Standard Oil Co. of California), gave one of the best descriptions of methods of deep drilling as practiced in the Coalinga field that has been found in the course of this review. Although presented in February, 1915, this engineering discussion was not printed in a trade publication until three months later.

The difficulties and methods of reaching production in the neighborhood of 4,000 feet were described. Because of sand conditions, which Eastern operators could not understand, it was desirable to carry large-diameter casing 2,000 or 3,000 feet without using great lengths of conductor pipe. The objective was to shut off, with 10-inch pipe, the top water, which might lie within 100 feet of the oil sand. If the pressure was found to be to great, 8½-inch casing was used for the water string. As stated in an earlier section, the American Petroleum Institute was not formed until 1919, and its work of standardizing of oil-industry equipment was begun still later. Lack of standards for all types of field equipment, particularly tubular goods, caused great annoyance and led to many well failures. It was not uncommon in running casing to find that the threads on a joint of pipe being "stabbed" would not match those in the collar of the preceding joint run in the hole, because pipe from two or more manufacturers using slightly different gages might be delivered to a well; the pipe checker had a heavy responsibility to assure uniform casing suitable for a particular job.

In California fields the limit for 10-inch casing used in the rotary method was approximately 3,200 feet, although Lombardi thought that this depth might be increased soon. However, the rotary method at first was received coldly in California because of difficulties of recognizing oil sands penetrated by the drill. Core drilling ahead of the rotary bit had not come into generai use.

Lombardi's paper gave particular attention to cable-tool operations and their modifications. He stressed the desirability of reaching a depth of 4,000 feet or more with a string of pipe not less than 8¼ inches in diameter and of having this string free and movable at that depth with a minimum length of conductor pipe in the upper part of the hole. He referred to an accomplishment of William Keck, a well-known, daring, drilling contractor of the period, who set a 15½-inch string at 2,300 feet, followed by a 12½-inch string at 3,003 feet. This was noteworthy because the unconsolidated sands would not stand up if the tools were more than 40 or 50 feet ahead of the pipe.

The circulator system, by means of which mud fluid was used with cable tools, also was described in detail by Lombardi. The circulation of mud fluid under pressure downward within the pipe to return to the surface outside of the pipe was somewhat similar to the rotary system. To obtain circulation of mud fluid drilling with percussion tools a casinghead similar to an oil saver was used.

The pipe had to be kept moving while drilling was in progress, and this was accomplished by means of a spider (special pipe clamp), swinging in the derrick. The system required a 30-foot cellar so that lengths of casing could be added as required during drilling, and an extra 40-horsepower boiler and a 12- by 4- by 12-inch pump were needed. The pump (handling the mud fluid having a specific gravity of about 1.4) was placed on the derrick floor between the tug side of the bullwheel and the side of the derrick. With the circulator system, 3,336 feet of 10-inch casing was set in 122 days' drilling time.

Lombardi and his associates recognized the limitations of casing then used. Joints frequently collapsed or would not withstand maximum "pull." He suggested that a desirable string of casing, capable of being set at greater depths, should be heavy on the bottom (to

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This method, used in conjunction with doctor treatment, removes lower boiling point mercaptans with caustic which is regenerated for continuous use. Licensed by Shell Development Company. (U. S. Pat. No. 1,943,744)

SHELL PHOSPHATE PROCESS

A process for eliminating hydrogen sulfide from butane, propane and other gaseous and liquid hydrocarbons. The method is regenerative. Operating and maintenance costs are low. Licensed by Shell Development Company.

SHELL

SHELL DEVELOPMENT COMPANY

100 BUSH STREET · SAN FRANCISCO · CALIFORNIA

withstand hydrostatic pressure); light on top (to reduce the weight of the string); but the top part must have the greater tensile strength. He also suggested the desirability of using an upset-end casing for the upper part of the string. The upset should be outside of the pipe. He called attention to the advantages of fewer threads per inch, stating that 8-thread casing would stand more screwing and unscrewing and general "grief" than customary 10-thread casing.

By using a hydraulic elevator operating in a cellar having a lift of about 22 feet (in place of the overhead spider) and with other suggested improvement, Lombardi thought it reasonable to expect that 8¼-, 10-, and 10⅝-inch water strings could be carried to 4,000 or more feet in the Coalinga field with only a few feet of conductor pipe near the surface.

Before this section on California drilling practice is concluded, it should be noted that both Guiberson and Lombardi described some of the more progressive practices in the State. Remnants of early drilling equipment in some fields and remembrances of those who saw the machinery, tools, and appurtenances when they were new suggest that many wells were not equipped as were the Coalinga-type and "California Imperial" rigs.

Kobbe referred to the indiscriminate use of perforating machines in completing oil wells—a subject discussed in more detail by Arnold and Garfias, who in 1914 had reported on production methods used in California when wells did not flow naturally.

According to those writers, at one well (1,300 feet deep) in the Coalinga field, where the casing supposedly had been perforated three times, later inspection of the pulled casing showed that, except for a few holes, the machine had only dented the casing. Another difficulty developed in other wells, because the casing was so brittle that it broke out in large sections when the perforator was used or the collars of the pipe were strained by the perforator, causing subsequent collapse. The metallurgical skill applied to oil-industry pipe had not advanced to its present high point.

Kobbe described and showed pictures of different types of wire-bound and wireless screened casing, including the Layne & Bowler and McEvoy patterns. He believed that the main function of screened casing should be **"the regulated entry of the maximum amount of sand and oil"** to the exclusion of material that would interfere with action of the pump. This statement evoked considerable comment. In support of his view, Kobbe referred to the findings of Thompson that in practice a screen of too fine mesh frequently decreased oil production.

It was not until a few years ago that engineers began to apply scientific methods to the selection of screen openings in oil strings, and even more recently has this complex problem been attacked on a fundamental basis to determine, by laboratory procedure, pressure distribution in the space immediately surrounding slotted pipes. Miller has found that there is a definite optimum size of opening that can be determined, with a fair degree of accuracy, to give maximum flow of oil into the well bore with minimum loss of pressure in the sand. However, in retrospect it should be remembered that the prevailing objective of 1917 was "more oil" and not minimum depletion of available reservoir energy, and Kobbe was attempting to solve a specific immediate problem of extracting as much oil as possible from unconsolidated sands in California by removing large quantities of sand with the oil.

Cleaning out wells was a subject also discussed by Kobbe. He referred to swabbing and the use of steam but thought that hot oil was best to "liven up" a well .

Pumping

After a well ceased to flow naturally the customary procedure in many fields of the country was to tube it in preparation for pumping. The polished rod, working through a stuffing box on the wellhead and constituting the upper part of the pump mechanism, was attached to the end of the walking beam with a suitable, or handy, connection. The source of power frequently was the steam engine used in drilling the well (or a gas engine replacing the original prime mover), connected to the bandwheel by a leather belt of several ply. Rubber-composition belts were used widely in the oil fields later as leather became more expensive; the technique of the rubber industry developed and the supply became more plentiful. Central powers had been used in some areas for years, but few of these were balanced by means of vector diagrams—unless a "resident engineer fresh out of college" was given the assignment of designing an efficient lay-out and staking the power site. Even then, terrain frequently had more influence with the production superintendent than the resolution of forces into their components in accordance with mathematical and mechanical principles known to Galileo.

Nevertheless, the advantages of individual pumping units and straight-line motion to the pump rods were recognized, at least by some manufacturers of equipment; because in June 1915 a nationally known equipment manufacturer carried a full-page advertisement in a trade publication calling attention to the advantages of individual pumping units equipped with a reciprocating device that gave the polish rod an "extra-straight-line motion.

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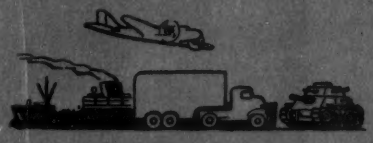
*Reprinted from Bureau of Mines Information Circular 7171.

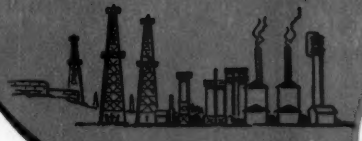
This paper is one of a series on petroleum prepared at the request of the Energy Resources Committee of the National Resources Planning Board. Other papers in the series include Developments in Petroleum Refining Technology in the United States during 1914-19, by A. J. Kraemer; Technical Research by the Bureau of Mines in Oil and Gas Production, Refining, and Utilization, by H. C. Miller and G. B. Shea.

PARTNERS IN PREPAREDNESS

Men



Machines



Petroleum Products

HANCOCK Petroleum Products

- GASOLINE
- DIESEL FUELS
- FUEL OILS
- HEATING OILS
- LUBRICANTS

MEN and machines by the millions...all busily engaged in the mighty preparedness program for the Nation's defense... find a willing and important partner in the ever-ready power of modern petroleum products. It is a matter of great pride to HANCOCK that its products are playing an ever-increasing part in helping speed the preparedness activities of the West.

The HANCOCK OIL COMPANY of California

PRODUCERS • REFINERS • MARKETERS

M. W. Thornburg Sumner Wells Aide

M. W. Thornburg has been added to the growing list of California petroleum industry executives placed in high governmental positions in the interests of

M. W. Thornburg

national defense. Mr. Thornburg's appointment as Special Assistant to Under Secretary of State Sumner Wells was announced recently.

Born at Rancho Los Alamitos (Los Angeles County) in 1892, Mr. Thornburg was educated at the University of California where he received the degrees of A.B., B. S., and C.E. At the outbreak of World War No. 1, he joined the regular army as a second lieutenant. In 1918 he became a first lieutenant, and the following year, a captain. He was with the AEF in France and the Army of Occupation in Germany from October 1918 to January 1920. He took advantage of the occasion in 1919 to attend the University of Grenoble.

Mr. Thornburg joined Standard Oil Co. of California in 1920 and was draftsman and engineer until 1926. From 1926 to 1929 he was chief engineer of refineries for the company. In 1929-30 he was manager of the Richmond refinery, and from 1930 to 1936, chairman of the engineering board. From 1936 to 1941 his connections were with Bahrein Petroleum Co., Ltd.; California Texas Oil Co., Ltd., as director and vice president in charge of operations and relations with foreign governments.

The newly appointed special assistant to the Under Secretary of State is a member of the Council on Foreign Relations, the Royal Asiatic Society, the American Geographical Society, the American Academy of Political Sciences, and the East India Association. He has spent most of the time for the past five years in London and the Middle East, and has traveled extensively in India and the Far East. He was a member of several expeditions in the interior of Saudi Arabia, and was one of a party of the first white men to explore the Persian Gulf shore of North Eastern Arabia.

E. W. Pauley Sent To Study English Oil

Announcement was made by Oil Coordinator Ickes on August 14 that he was sending Edwin W. Pauley, president of the Petrol Corp., Los Angeles, to England to study the oil situation "in all its phases". Mr. Pauley left Washington on August 14. Ickes also stated that the Pacific Coast oil situation would likely become "tight" as the result of the transfer of 4 tankers into the Russian service. "There is a chance of a filling station curfew there", he said, "but I don't know whether I will try any more". Three Pacific Coast tankers have already been requisitioned to carry aviation gasoline to Vladivostok, and the oil coordinator's statement indicates another will be so used.

A. D. McKinniss Completes 34-Year "Oilwell" Service

Retiring at the completion of 34 years of service with Oil Well Supply Co., A. D. McKinniss, cashier for the California division, begins his well-earned leisure August 31, having reached his 65th birthday. His "Oilwell" friends presented him with an electric chime clock and a wallet with brand new bills.

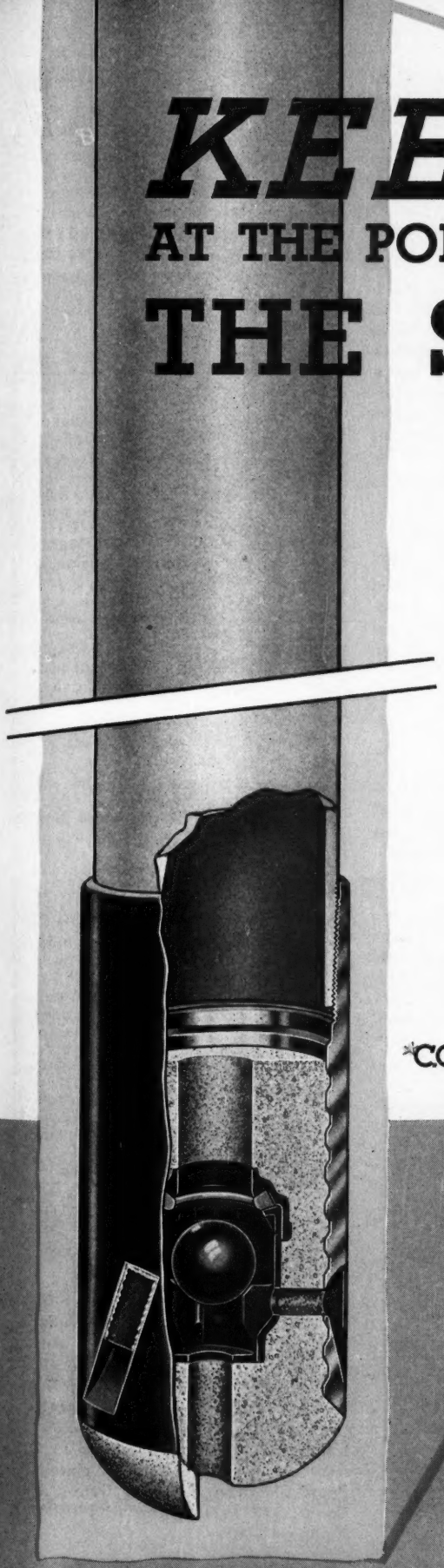
Melvin F. Jones, California division auditor, has appointed Miss Marian B. Van Maanen as cashier to succeed Mr. McKinniss.

A. D. McKinniss and Miss Marian B. Van Maanen. Above, Melvin F. Jones.

KEEP C.C.

AT THE POINT WHERE IT COUNTS..

THE SHOE JOINT



Product No. 120
Fig. L-28
Baker Cement Wash-Down Whirler
Float Shoe
*The Baker Wash-Down Whirler principle is also available in a Guide Shoe

AND YOU CAN DO IT WITH A BAKER CEMENT WASH-DOWN WHIRLER SHOE

C. C. (CEMENTING CONTROL) is just as important (if not more important) in sub-surface phases of cementing casing as it is in *above surface* operations.

Above the ground, every step from "the mix" to "displacement," is carefully controlled. But when the slurry reaches the discharge point, the Shoe, it's in greater need of control than ever before—control to see that the slurry will go where it will do the most good—*entirely around the casing* at the critical cementing point, the Shoe joint. And that's just the CEMENTING CONTROL provided by the Baker Cement Wash-Down Whirler Shoe. When the slurry strikes the baffled whirler ports in a Baker Cement Wash-Down Whirler unit, it travels in a downward and then upward direction with a whirling motion that assures best possible distribution of a uniform body of cement entirely around the shoe and the shoe joint.

It is this efficient whirling action that reduces the hazard of channeling (and a possible recement job) to a minimum.

If you are not using Baker Cement Wash-Down Whirler Shoes, it will pay you to secure complete details from the nearest Baker Office or field representative. Also see page 222 of your 1941 Composite Catalog.

C.C. stands for CEMENTING CONTROL—Remember a Baker Cement Wash-Down Whirler Shoe gives you COMPLETE C.C.

BAKER CEMENT WASH-DOWN WHIRLER FLOAT SHOE PROVIDES 5 IMPORTANT FEATURES:

1. Ample Strength
2. Whirler Action for Washing Down Bridges
3. Efficient Cementing (CEMENTING CONTROL)
4. Positive Acting BALL-TYPE Back Pressure Valve
5. Easy Drillability

BAKER OIL TOOLS, INC.

Main Office and Factory: 6000 So. Boyle Ave.
Box 127 Vernon Station, Los Angeles, California

Central Division Office and Factory:
6023 Navigation Blvd., Box 3048, Houston, Texas

Export Sales Office: 19 Rector St., New York, N. Y.

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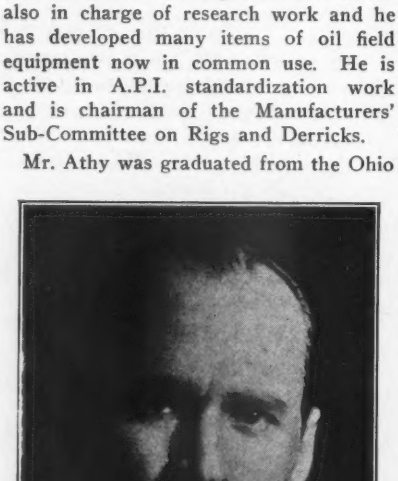

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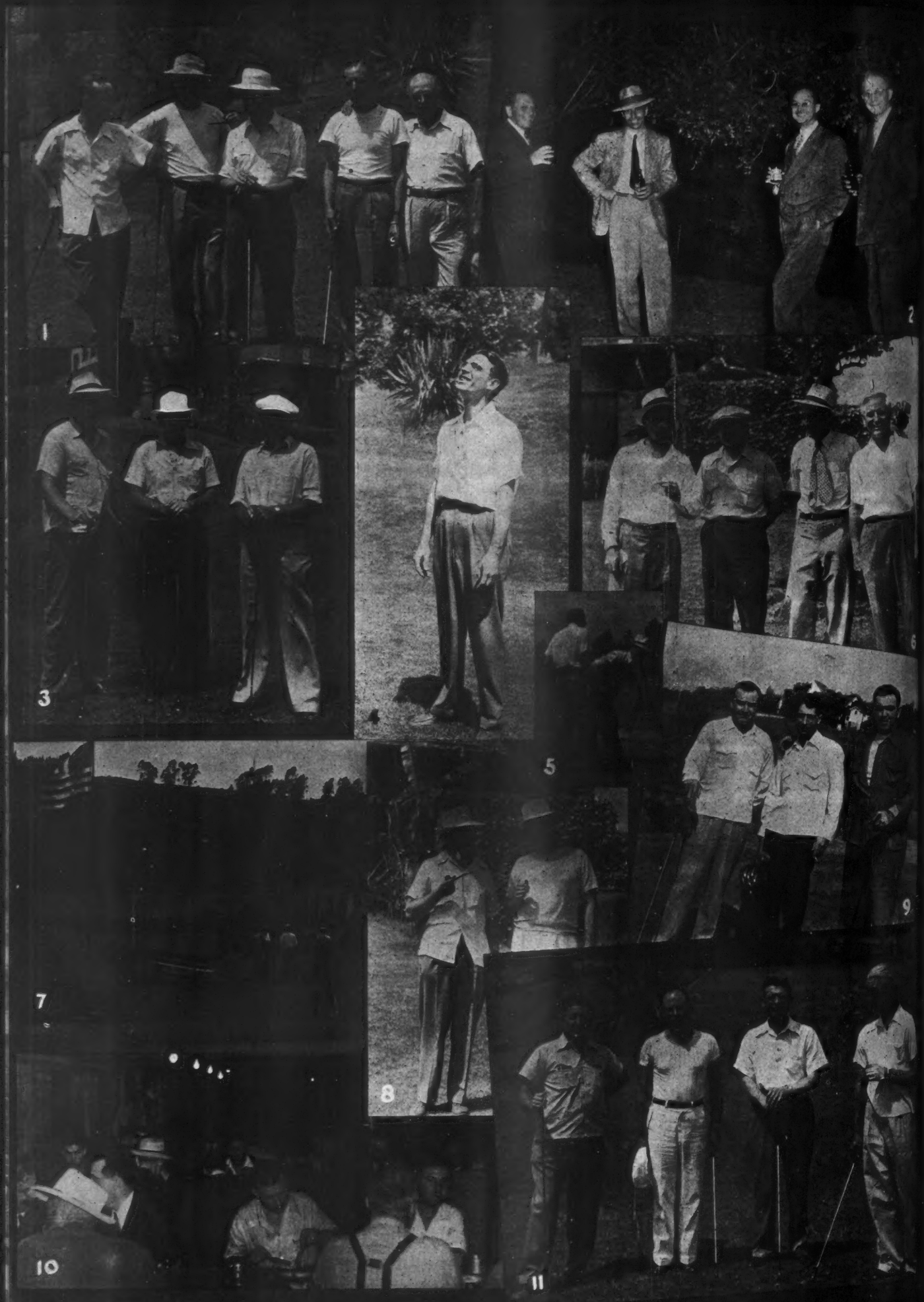
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Field Development

Los Angeles Basin

Bankline Well Cores For Del Valle Sand

Most interesting well in the Del Valle area at the present time is Bankline Oil Co.'s Videgain No. 101, westerly offset to the Jasper Petroleum Co.-Herley-Kelley Videgain No. 1, which found production a mile west of the Havenstrite's Lincoln wells. When last reported, the well was coring shale just below 6000 ft. and was expected to top the Jasper zone near the 6100 ft. level. Tentative correlations indicate the Bankline project is about 50 ft. structurally higher than its producing neighbor, the Miocene being encountered at approximately 5850 ft., drilled depth, against 5650 ft. in the Jasper well. Bankline's well is situated one location to the west and at a 250 ft. greater surface elevation. Should these correlations ultimately prove correct, the area to the west will be wide open for further extension work.

Two other wells offsetting the West Del Valle discovery will soon shed more light on the form of the structure. To the south, Ohio Oil Co. is below 4500 ft. in Vasquez No. 1 while on the east, Standard Oil Co. is drilling Sepulveda No. 1 near the 3000 ft. mark. Miocene and oil sand tops from the four wells will go far towards clarifying the general picture.

Extending the original discovery area 660 ft. to the west, R. E. Havenstrite, Operator, brought in Lincoln No. 6 from 185 ft. of Modelo sands open to bottom at 6185 ft. The 1600 bbl. initial rate was immediately beaned back to 350 bbls. daily through a 20/64 in. orifice. Moving still farther west, the Havenstrites are spudding in No. 1 on the Barnes lease. Wells No. 7 and No. 8 are drilling on the Lincoln property.

NOMAD PICTURES

←

1. Foursome and fourth: Clarence Davenport, Hi Cassidy, Cy Fluor, Foy Schlettler, and Jack Ballagh. 2. Group of Nature Lovers at Brea. 3. If B. Bronzan (4) would step over, Don Roberts, Frank Knox and George Anderson would make a foursome. 5. What's Johnny Augsburger done with that ball? 6. You should have heard the argument which preceeded this happy shot of Charles Schultz, J. E. Pooler, L. E. Hogsett and A. G. Haglund. 8. Elmer Smith and Ernie Fowks opine the day's going to be a success. 9. R. E. Smith, K. C. Templeton and T. C. Murphy were busy men that day. 10. Comestibles. 11. Walter Bitterling, H. P. Larkin, Lou Bronzan and Zell Harshton finally launched to seek the rara avis.

Wildcats Hold Newhall Interest

Although an important discovery nowhere seems imminent in the

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Athens	Rankin & Williams	1	7, 3-13	9483	Idle
	Lytle, Robt. S., Operator, Anderson	2	1, 3-14	6120	Drilling
Castaic	Young, Roy W., Inc., Walker	1	11, 4-16	2657	Drilling
Coyote—West	The Texas Co., McNally	A-1	22, 3-11	899	Drilling
El Segundo	Dominguez Ext. Oil Co., Dominguez-Sunset	1	19, 3-14	7865	Cleaning out
Newhall	Aztec Oil Co., Sanborn	1	6, 3-16	4452	Drilling
	Barnsdall Oil Co., Limbocher	1	17, 3-16	1472	Drilling
	Kenneth Oil Prod. Co., Shepard-Roy	1	34, 4-15	2165	Drilling
	St. Anthony Oil Corp., Lassalle	1	10, 3-16	5320	Drilling
	Tunnel Oil Co., Needham	1	13, 3-16	1760	Rng. tubing
Palos Verdes	Newton Dev. Co., Palos Verdes	1	13, 5-15	2295	Idle
	Surety Holding Co.	1	22, 5-14	1095	Drilling
Puente Hills	Altchuler, Louis B., Larry	1	30, 2-9	180	Drilling
	Continental Oil Co., Turnbull Comm.	1	13, 2-11	2616	Drilling
	Kosanke, J. F., Dragna	1	24, 2-10	1800	Idle
	Sunset Oil Co., Baldwin	1	11, 2-11	3479	Drilling
Redondo	Jergins Oil Co., Dominguez	1	5, 4-14	3860	Pumping
Rio Hondo	Potrero Oil Co., Well	1	32, 1-11		Rig
San Fernando	Imperial Corp., Rolland Lee	1	25, 2-17		Foundation
Whittier-La Habra	Bristol Oil Co., Cole	1	2, 3-11		Foundation
	Fullerton Oil Co., La Habra	9	25, 2-11		Rig
Wilmington	Wilcox, J. F., Timberlake	21	19, 4-13	3602	Completing
	Orange County				
Costa Mesa	Thompson, Milton N., Banning	1	9, 6-10	5649	Redrilling
Seal Beach	South Basin Oil Co., S.B.J.A.	1	6, 5-11		Location
	San Bernardino County				
Chino	Prado Oil Corp., Lamp	1	32, 2-7	1730	Drilling

Newhall area, much interest is being manifested, generally in the present wildcat crop. Most talked of in the lot is St. Anthony Oil Corp.'s Lassalle No. 1 in sec. 10-3-16, just east of the State Highway. After passing through a fracture zone with steep dips at 5000 ft., the well was temporarily suspended in steeply dipping brown shale beds at 5425 ft. Many oil and gas showings have been encountered and drilling is expected to be resumed shortly.

Aztec Oil Co.'s Sanborn No. 1, sec. 6,3-16, changed over to Lebow-McNee Oil Co.'s big new sparkplug rig and, when last reported, was deepening at 4452 ft. Though not cored, the top of the Miocene is said to be between 4250 and 4300 ft.

Most easterly of the Newhall wildcat group is Kenneth Oil Producing Co.'s Shepherd-Roy No. 1 in sec. 34,4-15 east of the Mint Canyon cutoff. A core at 2150 ft. recovered almost vertically dipping shale and the hole is being plugged to redrill from about 850 ft.

Northeast of Saugus, Roy Young, Inc., is spot coring below 2700 ft. The location, in sec. 11,4-16, has the OK of many prominent geologists.

Limbocker No. 1, joint test of Barnsdall Oil Co., Bandini Petroleum Co. and Ambassador Oil Co. in Towsley Canyon, was plugged from 1472 to 718 ft. and is being redrilled in an attempt to keep the hole from drifting with the steeply dipping formations.

In the old field near the site of the now non-existent Newhall Tunnel, Tunnel Oil Co. is completing Needham No. 1 on the pump. Bottom was plugged from 1760 to 1703 ft. where a liner was landed containing perforations below the shoe of the water string at 1520 ft. Drilling was done in good time with a modern portable rig.

Redondo Outpost Pumps 50 Barrels

Completed on the pump in the interval 3287-3620 ft., Jergins Oil Co. Dominguez No. 1, Redondo outpost well, is making 50 bbls. of 14 gravity oil a day with a 20% cut. Bottom is plugged back from 3860 ft. to 3620 ft. Foundations are in for a second well on the property 2700 ft. due east of the current well.

Delaney Tests Hill Outpost

Believing Royalty Service Corp. overlooked a small producer, Delaney Petroleum Corp. is testing Burgess No. 1, recently abandoned outpost near Orange Ave. on the north flank of the Signal Hill field. On several occasions the well has made short heads of oil and water leading the new operator to install pumping equipment.

In the northwest extension area,

→

12. Quaffing at the soft drink fountain to the strains of barbecue music. 13. Fred Vehlow and "Pop" E. R. Atkins prepare to work up an appetite. 14. We'll see you fellows on page 25. 15. Welcome to Shell's barbecue pits. 16. The food was highly cheering. 17. Walter Greenfield says it's just a matter of balance. 18. Cheerio. 19. Looking wistfully toward the sizzling barbecue. 20. At last. 21. Foy Schlettler knows some good ones.

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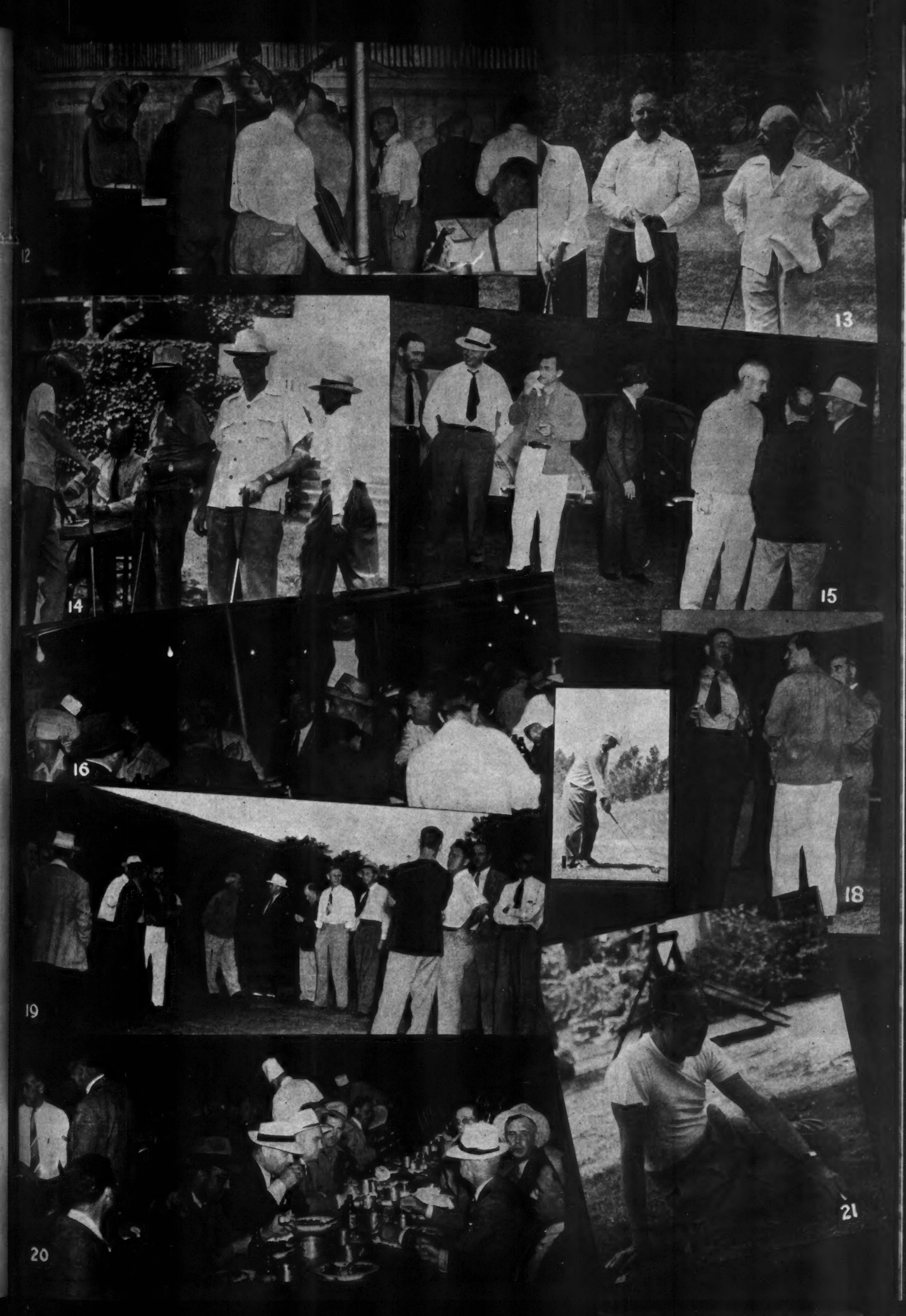
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Hilldon Oil Co. recompleted its discovery well, Amebco No. 1, flowing 200 bbls. a day on gas lift, the hole was deepened 1500 ft. to 5545 ft. Dominguez No. 3-19, most northwesterly of all wells in the Long Beach field, is being redrilled by Victory Oil Co. after plugging bottom from 8402 ft. to 6100 ft. The hole was drilled three years ago by Caminol Co.

A 50-bbl. yield was obtained by Shell Oil Co. in Alamitos No. 47 which offsets Dumm Bros. Petroleum Corp. No. 11 on the north slope of Reservoir Hill. The latter company is drilling No. 12 at 4925 ft.

Recompletions Boost Huntington Beach Interest

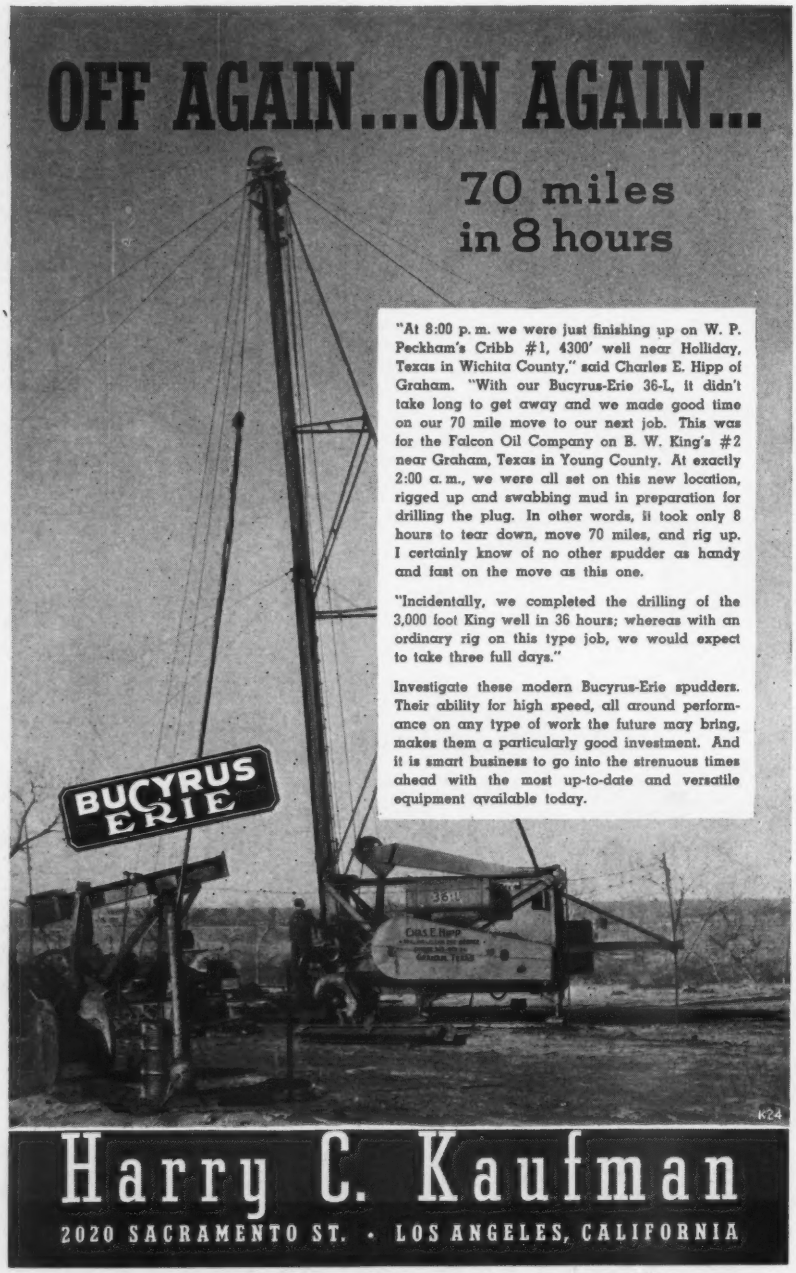
Good recompletions after workover jobs on old wells have considerably boosted the interests of operators in the Old Field section of Huntington Beach. Most surprising of the recent projects was The Texas Co.'s Brown No. 2, located on the west side of Hampshire Ave. south of Quincy St. and close to the fault which is believed to be the major control for the narrow neck of production extending southeasterly across Standard Oil Co.'s Thompson lease. Originally bottomed at 3700 ft., the old casing was gun-perforated from 2710 to 2745 ft. with 70 shots after which the well blew an estimated 500,000 cu. ft. gas rate with a spray of oil. The perforations sanded up within a short time and, after cleaning out, the well was put on the pump at an initial rate of 450 bbls. a day of 24 gravity clean oil. A few days later, production under curtailment was 100 bbls. daily.

On Edwards St. offsetting A. W. Lyddon's No. 1, Union Oil Co. deepened Copeland No. 9 to 4590 ft. and with 390 ft. open to bottom, recompleted pumping 110 bbls. of 25 gravity oil cutting 3.0%. In the same vicinity, H. C. Morton has completed several new wells for good yields and is now finishing Brooks No. 2 at 4693 ft.

Near the intersection of Crystal and Summit Sts., V. R. G. Wilbur redrilled and deepened Twining No. 3 to 4595 ft. and, with perforations open at intervals below 3329 ft., recompleted for 85 bbls. cutting 10%. Last production reported was 50 bbls. a day.

Signal Oil & Gas Co. and Southwest Exploration Co. temporarily suspended drilling activity during the vacation period but the latter company resumed August 2nd and is now ready to complete State No. 41.

At the north edge of production on Garfield St., Blake & Frampton re-


OFF AGAIN...ON AGAIN...
70 miles
in 8 hours
"At 8:00 p. m. we were just finishing up on W. P. Peckham's Cribb #1, 4300' well near Holliday, Texas in Wichita County," said Charles E. Hipp of Graham. "With our Bucyrus-Erie 36-L, it didn't take long to get away and we made good time on our 70 mile move to our next job. This was for the Falcon Oil Company on B. W. King's #2 near Graham, Texas in Young County. At exactly 2:00 a. m., we were all set on this new location, rigged up and swabbing mud in preparation for drilling the plug. In other words, it took only 8 hours to tear down, move 70 miles, and rig up. I certainly know of no other spudder as handy and fast on the move as this one.
"Incidentally, we completed the drilling of the 3,000 foot King well in 36 hours; whereas with an ordinary rig on this type job, we would expect to take three full days."
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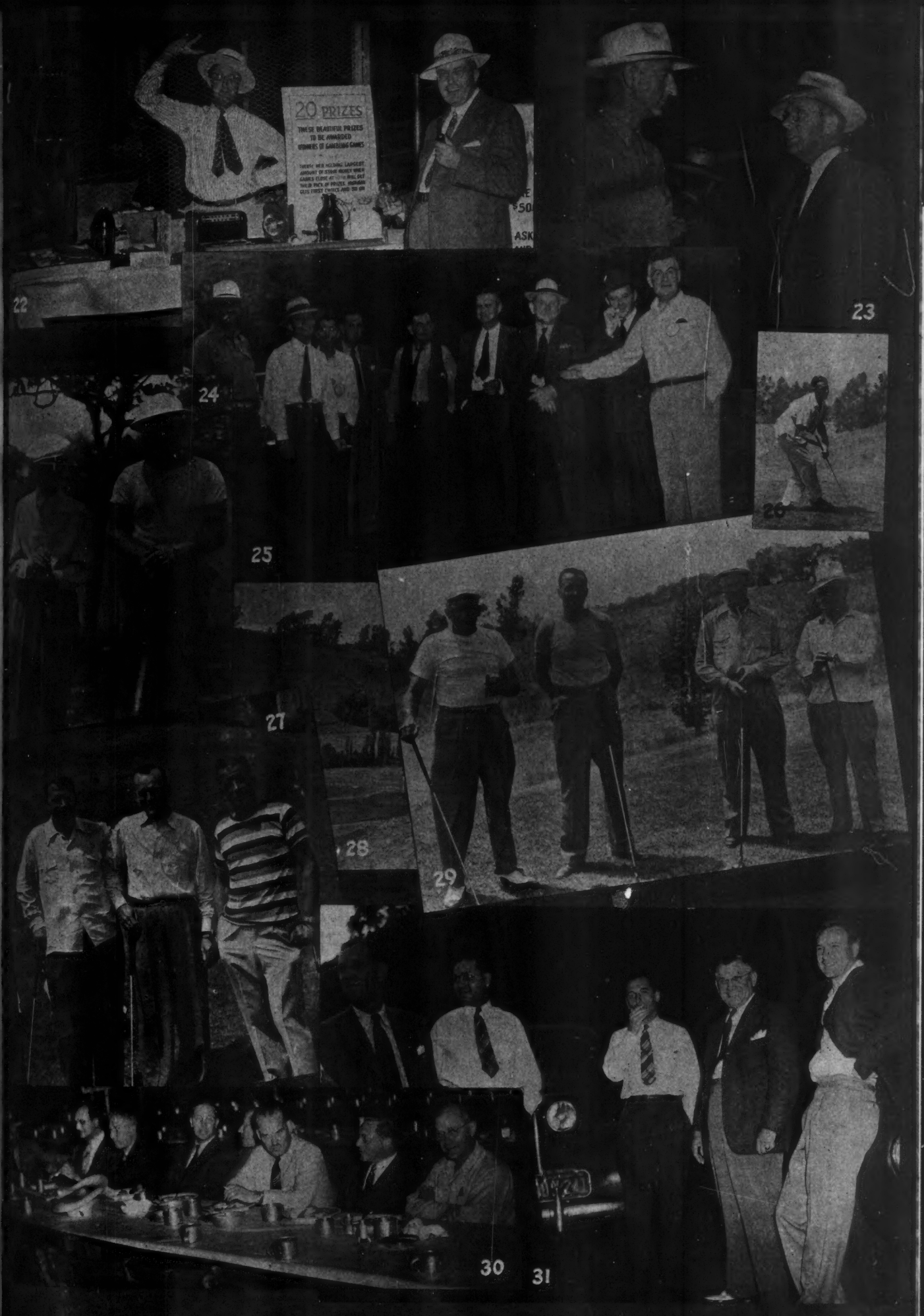
22. Hi Cassidy appears to be buying or selling something while Rod Durkee pauses to look over the NOMAD prize assortment. 23. Chairman Roy Hitchcock is giving Larry Miller the low-down on that spider bite. 24. W. T. Archer and Morris Smith prepare to embellish La Hacienda golf lore. 25. Bart Gillespie introduces in general fashion. 26. Abbe Jenks demonstrates the aesthetics of golf. 27. A hard slamming crew were Al Godfrey, Herb White and Hal Leedy. 29. Hans Ross, C. S. Perkins, Bill McGraw and Perry Hayes showed stellar form. 30. The food was splendid. 31. Now for a postprandial lookabout.


20 PRIZES
THESE BEAUTIFUL PRIZES TO BE AWARDED WINNERS OF GAMBLING GAMES
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conditioned the old Standard Oil Co. "G" No. 2 and put it on the pump for approximately 20 bbls. a day from 3700 ft.

Three Operators Join In Seal Beach Wildcat

South Basin Oil Co., Allied Petroleum Co. and A. S. Johnston Drilling Co. are preparing to drill a wildcat on the Hellman Estate properties two miles northeast of the city of Seal Beach and three-quarters of a mile from Union Oil Co.'s 7000 ft. dry hole at the bend in Westminster Road. The new location is 1770 ft. south and 1180 ft. west of the northeast corner of sec. 6,5-11 and is based on the surmised existence of a fault lying to the south between this site and the Union Oil Co.'s try. The well will be drilled under the South Basin name and will be called S. B. J. A. No. 1.

Four Wells Drill Puente Hills Area

Within a space of ten miles, four wildcat wells are drilling and one is preparing to start in the Puente Hills area. North of Whittier in the Turnbull Canyon area, Sunset Oil Co. is below 3500 ft. in Baldwin No. 1 while Continental Oil Co. is cleaning out after making a formation test at 2616 ft. which recovered fresh water. Los Nietos Valley Oil Co. has location graded at the corner of Washington and Sorenson Sts. Farther to the east, in sec. 24,2-10. J. F. Kosanke's Dragna No. 1 is past the 1700 ft. mark. Louis B. Altchuler of Eagle Oil & Refining Co. is drilling below 180 ft. in sec. 30,2-9 with cable tools. The latter operator plans to test sands expected at 1300 ft.

Hileford Cases Dominguez Well

With casing cemented at 7268 ft., Hileford Associates Stevens No. 1 is being prepared for a production test. If successful, the well will extend the West Dominguez field to the southwest corner of Main St. and Walnut Ave. South of Artesia Blvd. and east of Main St., Clareborne Associates No. 1, drilling below 5600 ft., is the only other active well. Practically all wells in the area are now either on gas lift or pumping.

Dominguez Extension Co. To Test at El Segundo

Dominguez Extension Oil Co. which recently redrilled the old 7865 ft. Julian-Sunset well to 5926 ft. is planning to run casing and test below 5600 ft. Location is south of Standard Oil Co.'s El Segundo tank farm.

→

32. Right on time, Bob Humphreys, L. A. Porter and Bill Cline. 3. Bound for the locker room, Dave Bradberry, George Trembley, E. R. Price and J. A. Wilcox. 34. Guests registered for door prize drawings. 35. Ditto. 36. The fellows walked about meeting old friends. 37. R. S. Durkee, Jay Curts, Jack Ballagh, and D. G. Miller survey the course with confidence. 38, 39, 40 and 41, candid shots at La Habra and Brea.

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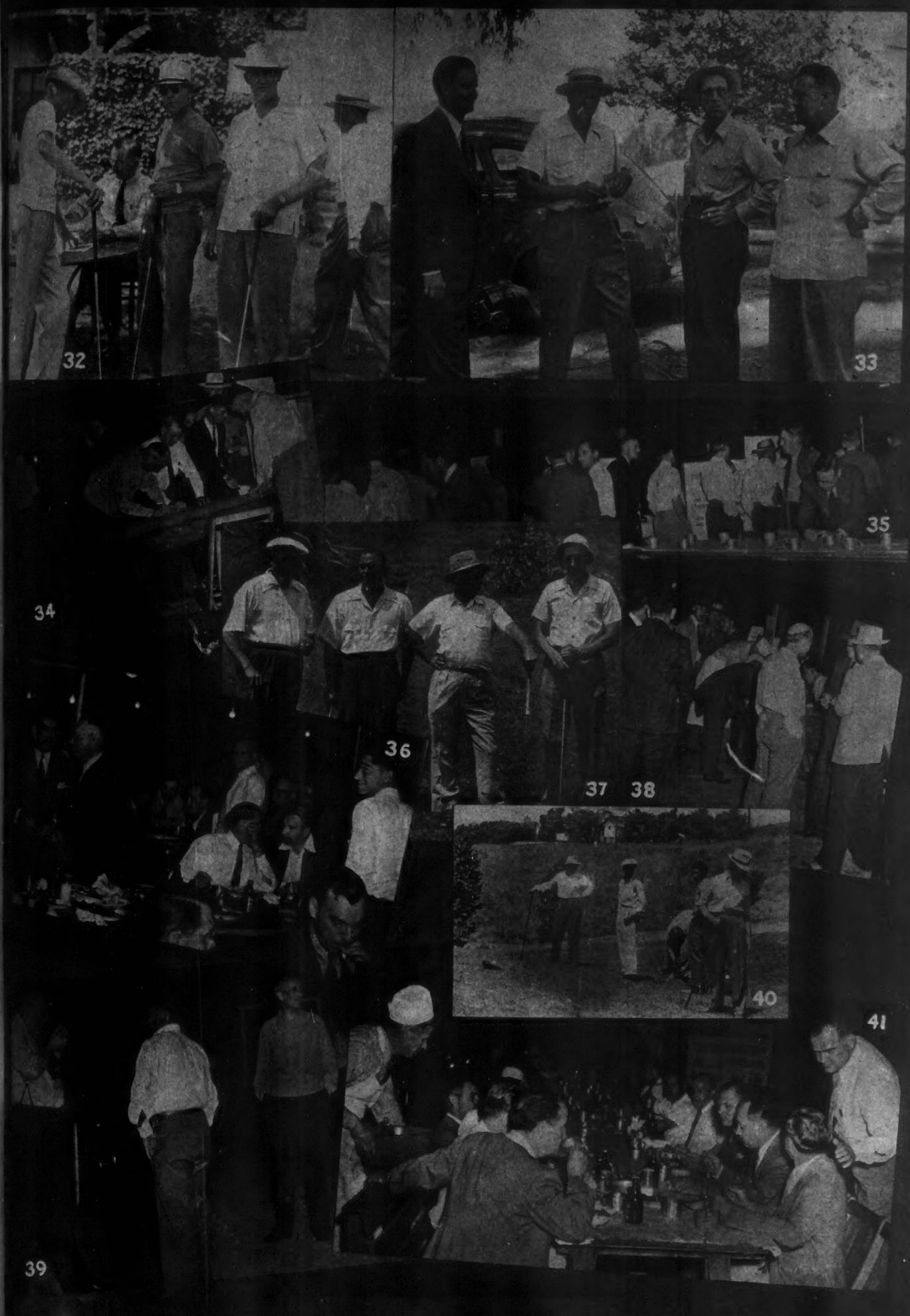
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San Joaquin Valley

Tide Water Quits Lost Hills Try

Tide Water Assoc. Oil Co.'s Islais No. 1 in sec. 16,27-21 off the southerly tip of the Lost Hills field, was abandoned at 6545 ft. after failing to recover a drill pipe fish. Having logged no showings worthy of test the project did not warrant a lengthy fishing job.

Well Scheduled For McKittrick Area

Jack D. Bryan has staked location for Gamble No. 1 in the northwest quarter of sec. 6,30-22 northeast of the main McKittrick area. The test is at the flank of a small pool of proved production and lies northwest of Otis Hoyt's recent completion on the Union Fee lands in the same section.

Mr. Hoyt's last well, Union No. 3, was finished from 2361 ft. pumping in excess of 200 bbls. daily before sanding up. It is reported that the well will be cleaned out and gravel packed, a system which tempers in part the troublesome sand condition.

Ring Oil Finishes Mt. Poso Pumpers

Ring Oil Co. finished two good pumpers on the Bohn lease in sec. 32,26-28 of the Mount Poso field. Latest to be finished are No.'s 6 & 7 from slightly below 1650 ft. for 400 bbls. of 15 gravity clean oil each. The company is completing No. 8 from the Vedder sands at 1653 ft. and has graded for No. 9.

Gen. Pet. Corp. Plans Semitropic Wildcat

One of the most interesting of many current San Joaquin Valley wildcats is the General Petroleum Corp.'s scheduled S. P. No. 15-51 in sec. 15,28-24. Located on fee lands of the Southern Pacific Railroad, midway between the Rio Bravo oil field and the Semitropic gas field, the site is in an area never before explored to depth.

The well will seek production on an axis drawn through the Semitropic field and which lies parallel and immediately southwest of the general northwest-southeast trend which has repeatedly proved commercial in the central Valley. A trend which runs through such famous fields as Wasco, Rio Bravo and Greeley.

Seven miles southeast of this well and a little more than six miles due west of the Greeley field, Superior Oil Co.'s super-deep wildcat, KCL No. 13, is showing little promise. The well, in sec. 18,29-25, was last reported coring at 13,140 ft. with no showings to lend encouragement. A circumstance which may be disappointing but does not necessarily

SAN JOAQUIN VALLEY WILDCATS

Fresno County

Area	Well	No.	Section	Depth	Status
Cantua Creek	Seaboard Oil Corp., Hagood	2	6, 17-13	4589	Abandoned
Jacalitos Hills	Wilshire Annex Oil Co.	33-26E	26, 21-15	2919	Drilling
Panoche Creek	Richfield Oil Corp., Stone-Bragg	1	33, 13-12	4421	Drilling
Raisin City	Amerada Pet. Corp., Clover	31–34	34, 16-17	6909	Drilling
	Gen. Pet. Corp., Burrel	1	2, 17-18	7822	Drilling
	Shell Oil Co., Inc., Ppties, Inc.	28–18	18, 15-18	4240	Drilling

Kern County

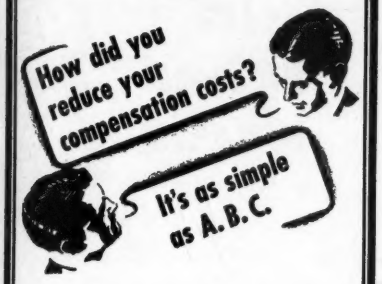
Belridge—South	Section 27 Oil Co., Aslin	1	27, 28-22	810	Cleaning out
	Sentinel Oil Co.	1	10, 28-20	3902	Idle
Buttonwillow	The Texas Co., S. P.	47–15	15, 28-24	12138	Suspended
Devils Den	Devils Den Oil Co., Well	1	24, 25-18		Location
	Herzog, R. D., La Baron	5	24, 25-18	410	Idle
	Herzog, R. D., Marine	29	26, 25-18	182	Idle
	Herzog, R. D., Marine	30	26, 25-18	215	Idle
	Herzog, R. D., McKay	1	26, 25-18	453	Idle
	Herzog, R. D., Marine	B–1	26, 25-18	711	Idle
	Herzog, R. D., Collins	1	26, 25-18	375	Idle
	Miesse & McCabe, Jacquelyn	1	26, 25-18	451	Completed
		2	26, 25-18	179	Drilling
	Morton, H. C., Core Hole	1	30, 26-19	2120	Drilling
Grapevine	Kern Line Oil Co.	1	19, 11-19	8390	Idle
Greeley—West	Superior Oil Co., KCL	13	18, 29-25	13480	Drilling
Kern Front	Richfield Oil Corp., Kramer	1	34, 28-27		Location
Lost Hills	Tide Water Assoc. Oil Co., Isolis	46	16, 27-21	6545	Abandoned
McClung	Macrate, A. N., Haberfelde	1	32, 29-26	7760	Drilling
	Ohio Oil Co., KCL	G-1	36, 29-26	10595	Abandoned
McKittrick	Bryan, J. D., Gamble	1	6, 30-22		Location
Mountain View	Richfield Oil Corp., West Mt. View	1	16, 30-28	3868	Drilling
Mt. Poso	Signal O. & G. Co. & Wright Vedder, V-S	1	32, 27-28	2393	Abandoned
Paloma	Union Oil Co., Morgan	81	14, 32-26	10480	Drilling
	Western Gulf Oil Co., Symons	12–7	7, 32-27	1540	Drilling
Richgrove	Borget, A. J., Kendall	1	16, 25-27	1710	Idle
	Dawson, A. E.	1	3, 25-27	2653	Abandoned
	Shell Oil Co., Bell,	52–27	21, 25-26		Location
	Smith	56-X-11	11, 26-27	189	Drilling
	Tide Water Assoc. Oil Co., Quinn	46	8, 25-27	3455	Drilling
	The Texas Co., G & L	77–1	1, 24-26	3537	Abandoned
Round Mt.	Bolsa Oil Co., Howell	2	32, 28-29		Location
Shafter	Continental Oil Co., KCL	C–2	35, 27-24	12934	Testing
	General Pet. Corp., S.P.	51–15	15, 28-24		Location
Shale Hills	The Texas Co., Anderson, Inc.	1	19, 28-20		Location
Union Avenue	Hancock Oil Co., Jewett Comm.	1	8, 30-28	4708	Drilling

Kings County

Pyramid Hills	Phillips Oil Prod. Co.	1	13, 24-18		Rig
	Pyramid Prod. Co., Spreckles	2	16, 24-18	1865	Idle
Reef Ridge	Blair Oil Co., Blair	1-B	24, 23-16	1086	Drilling
	Easterbrooks, S. F.	1	11, 23-26	715	Idle

Tulare County

Trico	Trico Oil & Gas Co., Seymour-Bolz	1	20, 24-23		Rig



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write off the project, particularly in view of prior Valley drillers which looked bad but nevertheless proved to be real producers in the final analysis. The most notable instance of this type was the Continental's discovery well at Wasco which was given a desperate and final test of unpromising sands resulting in the most spectacular discovery of recent years.

More Prospecting In South Valley

Richfield Oil Corp. is reported preparing to institute a wide program of post holing in the south section of the San Joaquin Valley where the company has thousands of acres under lease. First to get under way will be Tejon Core Hole No. 8 in sec. 18,10-19 in the Grapevine area. George Morgan of the Morgan Core Drilling Co. is reported to have a blanket contract covering an unspecified number of holes.

Mount Poso Outpost Finds Vedder Gray

Signal Oil & Gas Co. and Dwight G. Vedder, who combined talents to drill V-S No. 1 southeast of the Mount Poso field, abandoned the outpost in gray sand at 2393 ft. Located in sec. 32,27-28, the well found only a few oil stains in the top of the Upper Vedder at 2160 ft. and in the top of the Lower Vedder at 2359 ft.

Shell Oil Drills Third Fresno Well

Shell Oil Co.'s third Raisin City field well, Properties Inc. No. 28-18, was last reported drilling in sand and clay at 3461 ft. Located in sec. 18,15-18, one location west of the company's discovery well, the current driller will try for extension of the presently proved zone near 5050 ft. Remembering the sand difficulties which beset its second well, Santa Ana & Fresno Land No. 1-19 one location south of discovery, the company is reported planning to gravel pack the sands on this well, a practice which has proved emminently satisfactory in other areas where the sand phases have proved troublesome.

Seaboard Oil Corp. is reported planning a well on its adjacent acreage in the near future. This company also plans to utilize this method of sand control although final decision will be controlled in part by the results of the impending completion.

Nine miles south of the field development, General Petroleum Corp.'s

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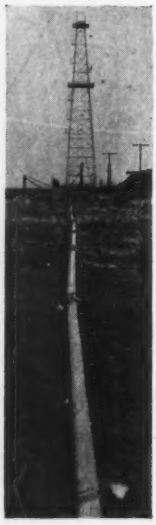
Burrel No. 1, in sec. 2,17-18, is reported coring shale at 7820 ft. This test is expected to thoroughly prospect the geologic section before calling it quits. Little has been reported concerning its position in the section since formation tests in the lower Miocene proved disappointing.

A little more than six miles to the west Amerada Pet. Corp.'s Fresno county wildcat, Clover No. 31-34 in sec. 34,16-17, is drilling in hard shale below 6500 ft.



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Texaco Abandons Richgrove "Cat"

Suspicion that the long sought production in the Richgrove area lies to the north and over the Kern-Tulare county line was dispelled when The Texas Co. abandoned Graham-Loftus No. 77-1 in Schist at 3537 ft. Located in the southeast corner of sec. 1,24-26 in a previously untried portion of the area, the well encountered no showings worthy of mention with the top of the basement rock found at 3528 ft.

Shell Oil Co.'s Smith No. 56-X-11 was recently spudded in sec. 11,26-27 at the southeast flank of the area.

Tide Water Assoc. Oil Co.'s No. 46 on sec. 8-25-27, a portion of the Quinn Ranch, is coring for the basement below 3500 ft. after finding only streaks of poor looking oil sand in the interval 1450 to 1530 ft. The Vedder and Walker sands were barren at 3196 ft. and 3220 ft. respectively.

Well Scheduled on McDonald Anticline

The Texas Co. is planning the immediate drilling of Anderson Inc. No. 1 in sec. 19,28-20. Located on McDonald Anticline five and a half miles west of the north tip of the South Belridge field, the well is on a yet undrilled section in the Shale Hills area. There has, however, been shallow drilling in prior years within a short radius of the site. Deepest of the earlier wells was the Casa Mira Oil Co.'s well in section 29 which carried to an unproductive 6500 ft.

Shell Oil Plans Delano Wildcat

East of the Richgrove area and southeast of the town of Delano, Shell Oil Co. plans to drill Bell No. 52-21 near the north quarter corner of sec. 21,25-26. This is a wildcat in the purest sense of the word, since no drilling has been done for a distance of nearly five miles in any direction, a circumstance rarely come upon in this much drilled section of the San Joaquin Valley.

in other words

by JOHN CLINTON

I have fallen in love with a red headed angel with round blue eyes and skin the color of Golden Guernsey cream. Her name's Judy, and I met her while she was sitting on the lap of a good looking young Minute Man at the Union Oil station at Bishop, Calif.

* * *

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* * *

I got to thinking about it on the way up to Virginia Lakes—about Judy's red hair and all the things Minute Men do, and I decided that touring is lots easier, safer and more convenient because of these Minute Men you find at Union Oil stations wherever you go.

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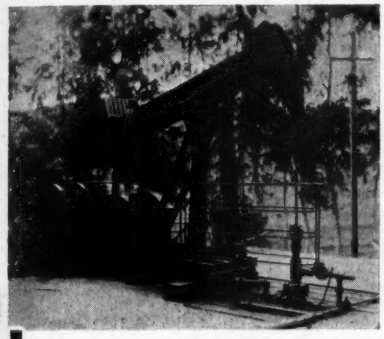
So when I start my own oil company I'll be as careful as Union when I pick my men. It's a swell way to sell gasoline, and a swell way to run a company. Next time *you're* driving, drop in and meet a Minute Man. And I wish I had Judy!

Seaboard Quits Cantua Creek Try

Seaboard Oil Corp.'s attempt at production near the west line of Fresno county failed when Hagood No. 2 was abandoned in gray sand at 4589 ft. Located in sec. 6,17-13, the well is thought to have been bottomed in the Panoche section of the Cretaceous although the horizon has not been positively identified. The top of the Cretaceous was placed when the Moreno was entered at 3064 ft.



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Panoche Showings Remain Unrevealed

The existence of or lack of showings in Richfield Oil Corp.'s Stone Bragg No. 1 in the Panoche Creek area seems destined to remain a secret until such time as the company's program is consummated. Located in sec. 33,13-12, northwest of all other Fresno county oil drilling, the well is known presently to be coring at 4331 ft.

McClung Area Try At Critical Zone

A. N. Macrate & Son's Haberfelde No. 1 in sec. 32,29-26 is entering a critical point in its drilling which may soon indicate the worth of the immediate area. Last reported reaming at 7760 ft. to clean up the hole before coring ahead, the well is thought to be but a few feet over the expected Stevens sands, a zone which is productive in the Greeley field less than two miles due north.

Geologists familiar with the area concede the location an excellent chance at finding the zone productive with an equally good shot at saturation in the Vedder zone, also productive in Greeley near 11,500 ft.

East Strand Well Proved Barren

Again confirming the fact that a controlling disturbance exists at the east flank of the yet small Strand field, Tide Water Assoc. Oil Co. abandoned its KCL No. E-44-7 in gray sand at 8872 ft.

Located only one site southeast of the company's No. E-33-7 which finished for 1700 bbls. from only 37 ft. of zone to bottom at 8340 ft., the current test prospected the entire Stevens section, finding no likely looking showings.

The "N" Point in the duster was found at 8032 ft. with the top of the second sand at 8328 ft. and the top of the barren third sand at 8553 ft. Streaks of showings in the second sand phase, tested from 8331 to 8346 ft., recovered only muddy salt water with spots of oil and gas cut mud.

Signal Pet. Plans Round Mt. Outpost

Signal Petroleum Co. of Calif., Ltd., headed by Lyle Garner, has located Larkin No. 1 in the southwest quarter of sec. 12,28-28 at the west flank of the north tip of the Round Mountain field. The well is expected to test another of the many fault blocks which comprise the east Valley fields.

Greeley Well Makes Large Potential

Standard Oil Co.'s KCL No. 12-15 in sec. 7,29-26 at Greeley has been finished from Rio Bravo sands at 11,510 ft. for an unusually high yield. Potential figures for the well were 2760 bbls. of 35.5 gravity oil cutting 0.8 per cent through a 31/64 in. bean. With 1510 lbs. tubing pressure and 1425 lbs. casing pressure, the well made 2,984,000 cu. ft. of gas to establish a very favorable gas-oil ratio.

Paloma Outpost Nears Stevens

Union Oil Co.'s Morgan No. 81-14, southerly outpost to the presently proved Paloma field limits, is coring hard shale with streaks of chert at 10,437 ft. Located in the northeast corner of sec. 14, 32-26, the well is believed nearing the Stevens zone and a partial answer to the possible size of this already geographically large field.

Western Gulf Oil Co., discoverer of the rich field, is drilling it's outpost Symons No. 12-7 in sec. 7, 32-27, in the grass root stage with depth reported at only 1500 ft.

Fullerton to Drill New La Habra Well

Fullerton Oil Co. has derrick erected for La Habra No. 9 in sec. 25,2-11 adjoining its group of gas-oil producers completed in the past ten months.

Coastal District

Cat Canyon Deep Test Seeks Monterey Production

Believed to be nearing the objective Monterey Chert is Alphonzo E. Bell Corp.'s Gilmore No. 1, located in sec. 23, 9-33 near the north end of the old West Cat Canyon field. Last reports from the field were that the drill had found oil in the upper section of the Sisquoc sands at approximately 3145 ft. and that if no deep production is encountered, a small well might be completed in the 30 year old zones. The hole is now being cored ahead below 4150 ft.

"Tex" Harvey Tests Huasna Wildcat Well

With 7-in. casing landed on bottom at 6149 ft. and perforated from 4800 to 5300 ft. and from 5340 to 5800 ft. "Tex" Harvey Oil Corp. Gilmore Comm. No. 2 at Huasna is being given a production test. The formations open are probably below the Monterey and may be equivalent to Vaqueros making this the deepest stratigraphically of any well in the area. Location is in sec. 11, 32-14 in the southerly portion of San Luis Obispo county.

Western Gulf Redrills Camulos Test Project

Western Gulf Oil Co.'s Rubel No. 1, located in sec. 22, 4-18 near Camulos in the Santa Clara River Valley, stopped drilling in conglomerate at 3506 ft. and plugged to 2500 ft. to set a whipstock and redrill directionally to the south. The well seeks production in the sandy phases of the Modelo which are prolific in the Oak Canyon and Del Valle fields to the north and east.

Standard to Pump Los Flores No. 2

With the hole bottomed in the Monterey Chert at 6465 ft. and a perforated liner below the shoe of the 7-in. casing at 6262 ft., Standard Oil Co. is installing a pumping unit to complete Los Flores No. 2 as a northerly extension well in the new productive area west of the West Cat Canyon field. Formation tests indicated that a fair producer can be expected. Drilling contractor J. E. Mabee has moved his equipment to Los Flores No. 3 which is now being rigged up.

Union Oil Co. is grading locations for two more wells, Bell Nos. 12 and 13, which are scheduled for early drilling. The field at present has two producers, Standard's Los Flores No. 1, the discovery well, and Union's Bell No. 11, each of which came in for over 800 bbls. a day. The activity, so far, has been confined to sec. 27,9-33.

C. C. M. O. Finishes Deep Rincon Well

Indicating the commercial value of the Rincon deep zone, Chanslor-Canfield Midway Oil Co. completed Hobson C-9 in the interval 8800-9300 ft. flowing 135 bbls. a day of 26 gravity oil through a 32/64 in. bean. The 40% initial cut appeared to be cleaning up satisfactorily at last reports.

The company's second deep well, Hobson C-3 is drilling below 9000 ft. and should set casing soon for a production trial.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Cat Canyon	Alphonzo E. Bell Corp., Gilmore	1	23, 9-33	4152	Drilling
Lompoc	O. C. Field Gasoline Co., Carreaga	1	31, 8-33		Rigging up
	San Luis Obispo County				
Huasna	Tex Harvey Oil Corp., Gilmore Comm.	2	11, 32-14	6149	Testing
	Ventura County				
Bardsdale	Cook, Osmere, King	1	33, 4-19	125	Idle
	Hopland Oil Co.	1	1, 3-19	2923	Idle
	Palma Oil Co.	1	8, 3-19	2865	Idle
	San Marino Oil Co., Capitol Crude	3	7, 3-19		Cellar
Camulos	Western Gulf Oil Co., Rubel	1	27, 4-18	3506	Redrilling
Conejo	Sycamore Oil Co., Boylan	1	23, 1-20	585	Drilling
Ojai	Oil Prod. Maintenance, Inc. Byhara	1	12, 4-22	620	Idle
	Richfield Oil Corp., Ojai	44	13, 4-22		Location
Piru	Havlin & Pottenger, Alice	1	33, 4-18	1715	Idle
	Glen Ogles Oil Co., Lisk	1	21, 5-18		Rigging up
Sespe	Inter Counties Fuel Co.	1A	22, 4-19	1300	Cleaning out
	Ivers, H. A., Kentuck		1, 4-20	140	Drilling
	McCaslin, W. E., Burson	1	19, 4-19	2039	Reaming
South Mountain	Comstock Pet. Co.	1	17, 3-29	2250	Idle
	Loose, E. H. & Dietzmann, J.	1	17, 3-20	1180	Drilling
	South Mountain Oil Co.	1	10, 3-20	2750	Pumping
Timber Canyon	Crude Oils, Inc., West	1	19, 4-20	865	Idle

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Alameda	Shell Oil Co., Nissen	1	7, 2s-3e	2447	Drilling
Colusa	Pacific National Pet. Corp.	1	17, 17n-4w		Rig
Madera	Shell Oil Co., Chowchilla Farms	74-9	9, 11s-14e	2520	Drilling
Mendocino	Keyt, N. F.	1	3, 12n-17w	1470	Drilling
Monterey	Loma Grande Oil Co., Corey	1	23, 24s-10e	3695	Fishing D.P.
Sacramento	Amerada Pet. Corp., F & C	1	4, 6n-3e	5830	Drilling
	Standard Oil Co., Prod. Prpties	1	23, 3n-3e	610	Drilling
San Joaquin	Standard Oil Co., Blewett	3	23, 3s-6e		Location
	Standard Oil Co., Mabry	2	31, 2n-5e	5285	Fishing D.P.
Solano	Standard Oil Co., Suisun Comm.	1	36, 4n-2w	4065	Drilling
Sonoma	Trico Oil & Gas Co., Miller	1	30, 5n-6w		No report
Yolo	Standard Oil Co., Tippetts	1-1	15, 12n-3w	1480	Drilling

Glen Ogles Rigs Devil Anticline Well

Believing that Janes No. 1 was not a fair test of this portion of Devil Anticline, Glen Ogles Oil Co. has moved 1000 ft. to the south in sec. 21, 5-18 and is rigging up to drill Lisk No. 1. Encouraging showings were reported by the operators at several points below 1000 ft. in the old 2863 ft. Janes well which was originally drilled by Richfield Oil Corp. years ago and recently tested by Glen Ogles.

Well Pumps 300 Bbls. In Old Santa Maria

Though 40 years old, the Santa Maria-Orcutt field is far from being washed up, Union Oil Co. having recently completed Squires No. 23 for 308 bbls. a day. Located in sec. 26, 9-34, the well was bottomed at 4040 ft. where a 5½-in. combination string was landed. Water shut-off was effected by cementing at the top of the perforated interval at 3531 ft.

Equipment was moved to Dome A-15 which is drilling near the 2500 ft. level.

Santa Maria Valley Activity Holds Well

Activity is holding up well in the extensive Santa Maria Valley field where half a dozen wells are drilling and an equal number of projects are in preliminary stages. Most interesting of the drilling projects is Rock Island Oil Co.'s Kemp No. 1 which, if successful, will extend production southeast into the southeast quarter of sec. 31, 10-33. The hole is reported bottomed at 3905 ft. with casing set at 3650 ft., 25 ft. above the top of the Monterey.

MORE BASIN

South Palos Verdes Wells

Field reports indicate little encouragement has been found by either of the pair of wells drilling on the cliff overlooking the sea at the south tip of the Palos Verdes Hills. Newton Development Co.'s cable tool well, located near Long Point, is said to be in volcanics at 2300 ft. while Surety Holding Co., near White Point, is drilling at about 1100 ft. and having trouble in maintaining circulation. Schist fragments have been reported in the latter well.

Standard Completes West Coyote Project

In completing Emery No. 72 at West Coyote, Standard Oil Co. obtained an initial flow estimated at 500 bbls. a day through a 24/64 in. bean. The 29 gravity oil was clean and was accompanied by 640,000 cu. ft. of gas. The hole is open between the shoe of the water string at 5283 ft. and bottom at 5760 ft.

Potrero Oil to Drill Rosemead Blvd. Project

Potrero Oil Co., first reported as Rosemead Corp., has derrick up and is preparing to drill its interesting wildcat located east of Rosemead Blvd., and north of the east tip of the Montebello field. The location is between the Rio Hondo and San Gabriel Rivers.

Tide Water Stakes New Potrero Location

In an attempt to extend Potrero production to the south, Tide Water Associated Oil Co. has staked a location for Potrero No. 5, 250 ft. north and 1020 east of the center of sec. 34, 2-11.

Main St. Wells Showing Promise

Though neither was on produc- as this was written, two wells should now be making oil at the extreme east end of the old Torrance field. East of Main St. and north of the Santa Fe Railroad crossing, J. F. Wilcox was running tubing and rods to test Timberlake No. 1 which cored a fair amount of heavy oil sand in the interval below the casing shoe at 3434 ft. to bottom at 3602 ft.

South of the railroad and west of Main St., Calokan Oil Co. was rigging to pump the Bren well which was drilled and suspended without testing two years ago. The hole is now open from 3360 to 3566 ft.

Chain Belt Co. Promotes Three

A number of changes have just been announced by Chain Belt Co. of Milwaukee.

B. E. Sivyer

W. B. Marshall who has been assistant sales manager of the Conveying and Engineering Products Division of the company has been made sales manager of that Division. Mr. Marshall has been with the company since 1920.

Another change brings B. E. Sivyer, former San Francisco branch manager, to Milwaukee as assistant sales manager of the Chain Belt and Transmission Division. Mr. Sivyer has been with Chain Belt Co. for ten years and of that time spent four and a half years in San Francisco. He attended the University of Wisconsin.

Replacing Mr. Sivyer as branch manager at San Francisco is S. Y. Warner who joined Chain Belt Co. in 1930, the same year he graduated from Sheffield Scientific School of Yale University. Mr. Warner has recently been in the company's Los Angeles office and the California oil fields.

Texas Co. Drills La Mirada Wildcat

With 11¾ in. surface casing cemented at 900 ft., The Texas Co. is drilling below 1500 ft. in McNally No. A-1, located within a stone's throw of La Mirada Station three miles west of the West Coyote field. It is expected that the well will explore to considerable depth.

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MIDWAY OIL & GAS LEASES FOR SALE

Department of the Interior, United States Land Office, Sacramento, California. Notice is hereby given that the oil and gas deposits in the NW¼ NW¼ Sec. 32, less the east 264 feet thereof, and the N½ N½ SW¼ NW¼ Sec. 32, less the east 264 feet thereof, all in T. 31 S., R. 23 E., M.D.M., containing 40 acres, and the SE¼ NE¼ Sec. 4, T. 32 S., R. 23 E., M.D.M., containing 40 acres, in the Midway field, California, separately or collectively are offered for leasing to the bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in Circular 1386. The sale will be held in the office of the Register of the district land office at Sacramento, California, at 10:00 o'clock A.M., on September 24, 1941. The successful bidder will be required to deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the bid, and file a showing of qualifications to receive a lease, required by section 7 of General Land Office Circular 1386. The remaining four-fifths of the amount bid, together with the annual rental in advance at the rate of $1.00 per acre or fraction thereof, must be paid, and a $5000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register. 9-5-d.

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Oil Men's Calendar

Calif. Natural Gasoline Association. **Los Angeles Chapter**—Meets 1st Thursday Each Month, Barker Bros. Bldg., Los Angeles—Dinner at 6:00 (Optional). **Taft Chapter**—Meets Third Thursday Each Month.

American Society of Mechanical Engineers—Los Angeles Section—Meets 2nd Thursday Each Month—Barker Bros. Bldg., Los Angeles. Dinner at 6:30 (Optional).

September

8-12—American Chemical Society, Chalfonte-Haddon Hall, Atlantic City, N. J.

17-19—National Petroleum Assn., 39th Annual Meeting, Hotel Traymore, Atlantic City.

25-26—Society of Automotive Engineers, National Tractor Meeting, Schroeder Hotel, Milwaukee, Wis.

29-30—National Lubricating Grease Institute, Ninth Annual Meeting, Stevens Hotel, Chicago, Ill.

October

6-8—Twenty-eighth National Foreign Trade Convention, Hotel Pennsylvania, New York.

6-9—National Safety Congress, Stevens Hotel, Chicago, Ill.

16-17—American Association of Petroleum Geologists, Pacific Section, Ambassador Hotel, **Los Angeles, Calif.**

16-18—American Institute of Mining & Metallurgical Engineers, Petroleum Division, Dallas, Tex.

20-22—Independent Pet. Assn. of America, 12th Annual Meeting, Tulsa, Okla.

30-31—American Institute of Mining & Metallurgical Engineers, Petroleum Division, **Los Angeles, Calif.**

30-Nov. 1—Society of Automotive Engineers, National Aircraft Production Meeting, Biltmore Hotel, **Los Angeles, Calif.**

31—California Natural Gasoline Assn., **Los Angeles, Calif.**

November

3-7—American Petroleum Institute, 22nd Annual Meeting, St. Francis and Palace Hotels, **San Francisco, Calif.**

December

3—New Mexico Oil & Gas Assn., Artesia, New Mexico.